



SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

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PCT/IB 03/03920

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L31/0203 H01L31/0232

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 239 519 A (CANON KK) 11 September 2002 (2002-09-11) the whole document	1-7, 9, 10, 12, 17-19
X	US 5 981 945 A (DIETRICH RALF ET AL) 9 November 1999 (1999-11-09) column 3, line 43 - line 44; figures 2, 4	1, 11, 12, 17-19
A	WO 01/86730 A (HOEHN KLAUS ; SORG JOERG (DE); OSRAM OPTO SEMICONDUCTORS GMBH (DE)) 15 November 2001 (2001-11-15) abstract	1-19
A	EP 0 627 637 A (SHARP KK) 7 December 1994 (1994-12-07) figure 7	8



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1239519	A	11-09-2002	CN 1377181 A	30-10-2002
			EP 1239519 A2	11-09-2002
			JP 2003204053 A	18-07-2003
			TW 536833 B	11-06-2003
			US 2004012698 A1	22-01-2004

US 5981945	A	09-11-1999	DE 19508222 C1	05-06-1996
			CN 1135660 A	13-11-1996
			DE 59607023 D1	12-07-2001
			EP 0731509 A1	11-09-1996
			ES 2158166 T3	01-09-2001
			JP 3256126 B2	12-02-2002
			JP 8264843 A	11-10-1996

WO 0186730	A	15-11-2001	DE 10023353 A1	29-11-2001
			CN 1439175 T	27-08-2003
			WO 0186730 A2	15-11-2001
			EP 1281205 A2	05-02-2003
			JP 2004512670 T	22-04-2004
			TW 525304 B	21-03-2003
			US 2003185526 A1	02-10-2003

EP 0627637	A	07-12-1994	JP 3230567 A	14-10-1991
			JP 3280574 A	11-12-1991
			JP 2518955 B2	31-07-1996
			JP 4044267 A	14-02-1992
			EP 0627637 A1	07-12-1994
			DE 69130399 D1	03-12-1998
			DE 69130399 T2	20-05-1999
			DE 69130777 D1	25-02-1999
			DE 69130777 T2	01-07-1999
			EP 0441594 A2	14-08-1991
			US 5239412 A	24-08-1993
